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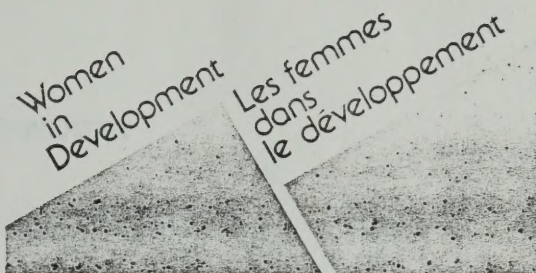
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WOMEN AND APPROPRIATE TECHNOLOGY

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The Present Situation

Within the past few years, 'appropriate technology' has become a catchphrase in development literature. Technology is considered appropriate if it makes optimum use of the available skills and resources of any given economic environment (1). Thus, appropriate technology is not a specific package of tools or techniques, but an approach which reflects a particular view of society or technology.

Most developing countries are in various stages of industrialization and therefore are undergoing widespread technological changes. Not all of these changes can be described as having been appropriate. In many cases, technologies from more industrially advanced countries have been imported without modification for local conditions.

The introduction of modern technology in traditional societies can drastically change women's traditional functions, roles and status in their families and communities. Often, technology is directed at the modern sector, where women are underrepresented. For example, technological changes in the modern agricultural sector have sometimes deprived women of their traditional employment. In other cases, the introduction of new agricultural technology has been time saving only for those who had the opportunity to receive training in the modern sector - mostly the men. Not enough attention had been given to alleviating women's daily tasks, i.e. in food processing or water supply.

For example, the introduction of tractors and animal-drawn equipment in one country made it possible to increase the number of acres to be ploughed. However, the tools the women were using for weeding and harvesting had not been updated. As a result, women's workload was increased because they had to process the extra yields without technological improvements (2).

Cost is always an important consideration in the adoption of any new technology. If men's work is bringing in more income, and if men manage the family budget, buying technology to improve women's traditional duties might not receive priority, especially when cash is sparse.

During the last few years, many community-based groups in the Third World have started to develop innovative technologies in food processing, energy saving, cooking and water collection. These technologies are constantly evaluated and refined by using feedback from local women (3). Unfortunately, much of the equipment developed locally has not yet been able to design marketing strategies that would allow them access to larger markets.

Past Achievements

Women's productivity in agriculture has been substantially increased by the attention given to the tools used for cultivation, harvesting and processing of food, as well as for transporting and storing agricultural inputs. For example, domestic vegetable dehydrators, grinding mills for corn, wheat and millet, and rice hullers are now widespread throughout the developing world.

Small presses for palm oil, coconut milk, or sugar cane are being tested and widely distributed. Peanut diggers and beaters for making peanuts into oil are also becoming common. This equipment is simple, low-cost, and hand-operated, thus relieving much of the drudgery from women's daily chores. It does not displace too many workers. In some instances, the small-scale manufacture of tools and equipment has even created employment opportunities for women (4).

New cookstove technologies have been developed and adapted to local needs. But local climatic conditions and cultural practices have to be taken into account before introducing improvements. For example, while the issue of smoke pollution is a major health consideration for many stove planners, homes with thatched roofs actually need the smoke to ward off bugs and insects that gather in the thatch.

Various attempts have been made to adapt solar technology to local needs. However, it has been difficult to overcome obstacles, such as high cost, difficulty of operation, fragility and health hazards. Solar cookers are now used to sterilize instruments in remote health clinics. Solar water heating and drying equipment are widely used in South Asia. Solar coolers and refrigeration are being developed for health clinics in rural Africa (5).

Biogas plants have been promoted throughout the Third World. They can provide fuel for heating, cooking and lighting, and they can generate power for irrigation. The slurry can be used as fertilizer. Biogas digesters aid health and sanitation by virtually destroying harmful parasites on human and agricultural wastes (6).

One-sixth of all the energy expended by women in rural areas is used in carrying water (7). Improved wells and simple handpumps that bring clean water for local use at low cost have been developed. Non-polluted water from roofs has been collected in clay or cement jars.

One example of new approaches to technology is the Philippine "Business for Social Progress" which, in 1979, organized the Center for Rural Technology Development (CRTD). This non-profit organization facilitates the attainment of economic self-sufficiency among farmers' organizations. The CRTD has two major goals: first, to develop, test, verify and disseminate technology appropriate to small farm families; and second, to develop viable community based organizations capable of managing agribusiness and basic needs projects. Women are one of the main target groups to be reached with new technology. Their input has been crucial for the successful adoption of new equipment (8). Many useful tools have been developed and tested by this organization.

Barriers to the Introduction of Appropriate Technology for Women

Capital-intensive technologies which have been designed for developed and industrialized countries are frequently inappropriate in Third World countries, where relative scarcity of capital and abundance of labour are common. Often, the sexual division of labour within a new social and cultural environment has not been sufficiently analyzed, and new technologies

have adversely affected labour distribution along gender lines. In some cases, it is the rural poor, and especially the women, who bear the brunt of these changes.

For example, in Gujarat, India, dairy production and marketing had usually been carried out by women, particularly those of the poorer castes. With the introduction of modern dairy complexes, women's jobs have been lost. Little consideration had been given to women's training needs (9).

In other cases, the cost-benefit analysis of projects showed that, although new technology was useful and desirable, the initial investment, and the cost of maintenance, was not worth the change. Access to credit and ownership of land are also factors that influence successful adoption of new technologies.

Future Action

- * Women in developing countries must be included in the planning, design and implementation of projects that involve new technologies.
- * Special efforts need to be made to train women along with men in the use and maintenance of new technology.
- * If women are being displaced by the introduction of new technology, specially designed projects may be necessary to integrate women into the process of change.
- * New technologies can be less costly if they are tested with users beforehand, and secondary effects of new technology analyzed as part of social impact studies.
- * New technologies should be designed with the objective of reducing Third World women's workload.

Footnotes

1. Experiences in Appropriate Technology, ed. Robert Mitchell, The Canadian Hunger Foundation, Ottawa, 1980.
2. Strategies of Small Farmer Development: An Empirical Study of Rural Development Projects, Vol.1, Elliott R. Morse, US Agency for International Development, May 1975.
3. "Technology Adoption and Extension Services for Rural Women: The CRTC Experience", Jaime Aristotle B. Alip, A Case Study paper submitted for the Workshop on Appropriate Technologies, Feb. 1985, Bangkok, Thailand.
4. Aid and Self-Help, Elizabeth O'Kelly, London, Chas. Knight, 1973.
5. "Are Stove Designs Misfiring?", Anita Anand, Development Forum, November-December 1984.
6. A Handbook on Appropriate Technology, Canadian Hunger Foundation.
7. "Village Technology and Women's Work in Eastern Africa," James McDowell and Virginia Hazzard, Assignment Children, UNICEF, October/December, 1976.
8. "Technology Adoption ...," op. cit., p.1.
9. The State of India's Environment 1982: A Citizen's Report, Centre for Science and Environment, New Delhi, 1982.

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